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U S NAVY RESPONSE TO INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT COMMENTS ON RCRA FACILITY INVESTIGATION REPORT SOLID WASTE MANAGEMENT UNIT 22 (SWMU 22) NSA CRANE IN

3/4/2014
NSA CRANE

RESPONSE TO IDEM COMMENTS (03/04/14)
ON
SWMU 22 RFI REPORT (JANUARY 2014)
NSA CRANE, CRANE INDIANA

Comment: In my notes the offsite investigation is 'Hill N of SWMU 22'...the report should mention that the RFI NFA conclusion is just for SWMU 22 and the offsite potential is being investigated separately.

Response: The SWMU 22 RFI Report Executive Summary will be revised to state that the NFA conclusion is just for SWMU 22 and does not address offsite sources.

Comment: However, if Bldg 138 is a source we should know how much it's contributing now, not as part of the 'Hill N of SWMU 22' investigation.

If we had a full N&E investigation and the highest concentration was 5.9 I wouldn't be concerned. In this case the 5.9 could be the leading edge of something larger...we just don't know. The same applies to the RDX hit...since we don't have an N&E is the RDX hit the highest concentration or the leading edge of something larger.

Response: The Navy considers that SWMU 22 investigations provide sufficient information to evaluate the nature and extent of contamination

Release of RDX or perchlorate from B-138 would likely have last occurred over 30 to 40 years ago. Both RDX and particularly perchlorate are mobile in water. If there were much higher concentrations of RDX or perchlorate in groundwater nearer to B-138 there has been adequate time for migration to occur.

There are three general possibilities for the releases of RDX (and perchlorate) observed in groundwater at SWMU 22. One possibility is that there is an unidentified source upgradient of SWMU 22. Detectable concentrations of RDX and perchlorate are found in groundwater upgradient of B138 (wells 22MWT001 and 22MWT006), but RDX in groundwater at well 22MWT001 (0.32 ug/L) is less than the downgradient concentrations of RDX in wells 22MWT002 (15 ug/L) and 22MWT005 (0.53 ug/). This suggests that B138 is the source area. Potential pathways of RDX might have been aerial discharge to the roof via vents and then release to the ground and migration to groundwater. However, no residual RDX was identified in the soils around B138.

RDX and perchlorates entering the SWMU 22 floor drains could have been released from the sewer line leading to the sanitary system. Soil borings 22SB15 through 17 were advanced along the sewer line extending from B138 and several soil samples were collected from along the drainage swales leading to the location of 22MWT002, but RDX was not detected. Perchlorate was not analyzed but would not be expected due to its mobility in soils

Another possibility for the contamination in groundwater at 22MWT002 is that surface runoff pooled at the confluence of the surface drainages at 22MWT002 and infiltrated downward into groundwater. That theory drove the additional soils investigation, but as noted above, no soil contamination was identified in the soils, surface or subsurface, as would have been expected for RDX. Again, perchlorate would not have been expected in soil, given its solubility.

The nature and extent of groundwater contamination has been determined. The sampling network (groundwater and surface water) is adequate to bound the extent of contamination. The local discharge of groundwater is to the hill slopes surrounding SWMU 22. Therefore, RDX has been delineated to the surface water discharges and would eliminate a "leading edge of something larger". As for perchlorate, it was not sampled for in the surface water samples south and east of B138, as it was not a risk driver for groundwater. Groundwater containing perchlorates discharges into surface water. Under low flow conditions (groundwater constitutes the entire flow) the maximum surface water perchlorate concentration would be the groundwater perchlorate concentration. In that case the Maximum concentration of perchlorate would be 5.9 ug/l which is below the IDEM action level and USEPA MCL of 15 ug/l for waters.

Moving in toward B138 (and presumably closer to the source), there may be higher concentrations in groundwater, but given the likely time since a release, the extent would be expected to be relatively stable. Future slugs of higher concentration of contamination would not be expected.